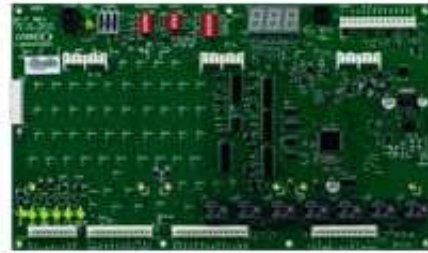


# XLENNOX Driver Manual

## Lennox IMC System Bus Protocol Driver



IMC  
Heating and Cooling Units



## CPKSoft Engineering

### Process Monitoring and Industrial Automation Software

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# 1. Introduction

CPKSoft Engineering assumes no responsibility for any errors that may appear in this document. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

This driver is included with all unlimited licenses of TAS-HMITalk. It is not sold separately. It requires the TAS-HMITalk ActiveX to work, therefore it cannot be used as a stand-alone driver.

If you use this driver in your applications, you need to include the xlennox.tlk in the set of files that you distribute. This file must be located in the same folder where the hmitalk.ocx file is registered in order to be found by the activex when the applications are executed.

The source-code for the xlennox.tlk driver is available in plain-C language for additional USD 1399 if you own a license of TAS-HMITalk 8.04 or higher.

Refer to the following link to visit the xlennox driver page at CPKSoft Engineering website: <http://www.cpksoft.com/tabid/55/ProductID/62/PageIndex/1/Default.aspx>.

Visit this link if you want to see a complete list of drivers that are currently available for TAS-HMITak: <http://www.cpksoft.com/Drivers/tabid/55/Default.aspx>.

Also, refer to this link if you are interested in purchasing a license of the most recent version of TAS-HMITalk: <http://www.cpksoft.com/Products/tabid/54/Default.aspx>.

We welcome your comments about this document. You can reach us by e-mail at [contact @ cpksoft.com](mailto:contact@cpksoft.com).

## 2. Driver details

### 2.1. Driver overview

---

XLENNOX allows you to connect to the Lennox Integrated Modular Control (IMC) System Bus (SBUS). The IMC-SBUS is a RS-485 hardware compatible, half-duplex, asynchronous serial bus designed to be used primarily with the Integrated Modular Control for Lennox Commercial heating and cooling units.

The 8-bit communications packets are sent at 9600 baud with one start bit, one stop bit and no parity. The SBUS protocol expects all active nodes to be compatible with master/slave format where there can only be one bus Master at a time controlling the bus traffic and all other nodes designated as Slaves, responding only when requested to.

### 2.2. Supported devices

---

This driver can communicate with these devices, but is not necessarily limited to this list:

LENNOX IMC Commercial Heating and Cooling Units

## 3. Command list

### 3.1. Read Current System Status

**Description of this command:**

Returns system status information.

**Type of data handled by this command:**

Analog Input

**Number of points accepted by this command:**

1-122.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

6

**Meaning of the DriverP3 parameter:**

128

**Values that are returned:**INPUTS:

Value in PointValue (0) = 1, Air Flow present

Value in PointValue (1) = 1, 24 VAC #2 present

Value in PointValue (2) = 1, Option 1 input present

Value in PointValue (3) = 1, 24 VAC #1 present

Value in PointValue (4) = 1, Dirty Filter

Value in PointValue (5) = 1, Defrost Pressure Switch 1 closed

Value in PointValue (6) = 1, Defrost Temperature Switch 1 closed

Value in PointValue (7) = 0, Freeze Stat 1 tripped

Value in PointValue (8) = 0, High Pressure 1 tripped

Value in PointValue (9) = 0, Low Pressure 1 tripped

Value in PointValue (10) = 1, Space occupied

Value in PointValue (11) = 1, Gas Valve Sense 1 energized

Value in PointValue (12) = 1, Combustion Blower 1 On

Value in PointValue (13) = 0, Rollout Switch 1 tripped

Value in PointValue (14) = 0, Secondary Limit 1 tripped

Value in PointValue (15) = 0, Primary Limit 1 tripped

Value in PointValue (16) = 1, SMOKE detection signal

Value in PointValue (17) = 1, Y2 Input

Value in PointValue (18) = 1, Y1 Input  
Value in PointValue (19) = 1, W2 Input  
Value in PointValue (20) = 1, W1 Input  
Value in PointValue (21) = 1, G Input

DEMAND INPUTS:

Value in PointValue (22) = 1, Space Occupied  
Value in PointValue (23) = 1, SMOKE detected  
Value in PointValue (24) = 1, Y2 demand  
Value in PointValue (25) = 1, Y1 demand  
Value in PointValue (26) = 1, W2 demand  
Value in PointValue (27) = 1, W1 demand  
Value in PointValue (28) = 1, G demand

COMPRESSOR STATUS:

Value in PointValue (29) = 1, Compressor 4 Ignore Strike Three  
Value in PointValue (30) = 1, Compressor 3 Ignore Strike Three  
Value in PointValue (31) = 1, Compressor 2 Ignore Strike Three  
Value in PointValue (32) = 1, Compressor 1 Ignore Strike Three  
Value in PointValue (33) = 1, Compressor 4 lockout  
Value in PointValue (34) = 1, Compressor 3 lockout  
Value in PointValue (35) = 1, Compressor 2 lockout  
Value in PointValue (36) = 1, Compressor 1 lockout

COMPRESSOR/DEFROST TIMERS:

Value in PointValue (37) = 1, Defrost Timer #2 On  
Value in PointValue (38) = 1, Defrost Timer #1 On  
Value in PointValue (39) = 1, Compressor 4 On/Off Timer set  
Value in PointValue (40) = 1, Compressor 3 On/Off Timer set  
Value in PointValue (41) = 1, Compressor 2 On/Off Timer set  
Value in PointValue (42) = 1, Compressor 1 On/Off Timer set

MEASUREMENTS:

Value in PointValue (43) = RETURN AIR TEMPERATURE, F  
Value in PointValue (44) = DISCHARGE AIR TEMPERATURE, F  
Value in PointValue (45) = INDOOR AIR QUALITY, ppm, CO2  
Value in PointValue (46) = OUTDOOR AIR TEMPERATURE, F  
Value in PointValue (47) = ROOM AIR TEMPERATURE, F  
Value in PointValue (48) = HEATING SETPOINT, F. This is the current setpoint used with the Room Sensor for heating. If the IMC is in the Occupied Mode, then the Occupied Heating Setpoint is returned and if the IMC is in the Unoccupied Mode, then the Unoccupied Heating Setpoint is returned.  
Value in PointValue (49) = COOLING SETPOINT, F. This is the current setpoint used with the Room Sensor for cooling. If the IMC is in the Occupied Mode, then the Occupied Cooling Setpoint is returned and if the IMC is in the Unoccupied Mode, then the Unoccupied Cooling Setpoint is returned.

FAN STATUS:

Value in PointValue (50) = 1, Service Relay On  
Value in PointValue (51) = 1, Blower On  
Value in PointValue (52) = 1, Fan #6 On  
Value in PointValue (53) = 1, Fan #5 On  
Value in PointValue (54) = 1, Fan #4 On  
Value in PointValue (55) = 1, Fan #3 On

Value in PointValue (56) = 1, Fan #2 On

Value in PointValue (57) = 1, Fan #1 On

**COMPRESSOR STATUS:**

Value in PointValue (58) = 1, Reversing Valve #2 On

Value in PointValue (59) = 1, Reversing Valve #1 On

Value in PointValue (60) = 1, Compressor #4 On

Value in PointValue (61) = 1, Compressor #3 On

Value in PointValue (62) = 1, Compressor #2 On

Value in PointValue (63) = 1, Compressor #1 On

**HEAT STATUS/ECONOMIZER CONTROL:**

Value in PointValue (64) = 1, Economizer Override

Value in PointValue (65) = 1, Open Economizer Damper to 100 %

Value in PointValue (66) = 1, Turn on Economizer Exhaust Fan

Value in PointValue (67) = 1, Economizer Damper to Minimum Position  
 0, Economizer Damper to fully closed

Value in PointValue (68) = 1, Heating Stage #4 On

Value in PointValue (69) = 1, Heating Stage #3 On

Value in PointValue (70) = 1, Heating Stage #2 On

Value in PointValue (71) = 1, Heating Stage #1 On

**HEATING STAGE #2 INPUT STATUS:**

Value in PointValue (72) = 1, Gas Valve On

Value in PointValue (73) = 1, Combustion Air Blower On

Value in PointValue (74) = 0, Rollout Switch Limit tripped

Value in PointValue (75) = 0, Secondary Limit tripped

Value in PointValue (76) = 0, Primary Limit tripped

**HEATING STAGE #1 INPUT STATUS:**

Value in PointValue (77) = 1, Gas Valve On

Value in PointValue (78) = 1, Combustion Air Blower On

Value in PointValue (79) = 0, Rollout Switch Limit tripped

Value in PointValue (80) = 0, Secondary Limit tripped

Value in PointValue (81) = 0, Primary Limit tripped

**FREEZESTAT/DEFROST STATUS:**

Value in PointValue (82) = 1, Defrost Pressure #2 switch closed

Value in PointValue (83) = 1, Defrost Pressure #1 switch closed

Value in PointValue (84) = 1, Defrost Temperature #2 switch closed

Value in PointValue (85) = 1, Defrost Temperature #1 switch closed

Value in PointValue (86) = 0, Freezestat 4 tripped

Value in PointValue (87) = 0, Freezestat 3 tripped

Value in PointValue (88) = 0, Freezestat 2 tripped

Value in PointValue (89) = 0, Freezestat 1 tripped

**PRESSURE STATUS:**

Value in PointValue (90) = 1, Compressor # 4 High Pressure OK

Value in PointValue (91) = 1, Compressor # 3 High Pressure OK

Value in PointValue (92) = 1, Compressor # 2 High Pressure OK

Value in PointValue (93) = 1, Compressor # 1 High Pressure OK

Value in PointValue (94) = 1, Compressor #4 Low Pressure OK

Value in PointValue (95) = 1, Compressor #3 Low Pressure OK

Value in PointValue (96) = 1, Compressor #2 Low Pressure OK

Value in PointValue (97) = 1, Compressor #1 Low Pressure OK

**ECONOMIZER STATUS:**

Value in PointValue (98) = ECONOMIZER DAMPER POSITION, %

Value in PointValue (99) = 1, Override Mode

Value in PointValue (100) = 1, Global Mode

Value in PointValue (101) = 1, Outdoor Air Suitable

Value in PointValue (102) = 1, Exhaust Fan On

Value in PointValue (103) = Economizer state, where:

0 = OFF

1 = INPUT

2 = IAQ

3 = DIRECT CONTROL

4 = OVERRIDE

5 = RUN

6 = MINIMUM RUN

**SYSTEM STATUS:**

Value in PointValue (104) = 1, Startup

Value in PointValue (105) = 1, Expansion Bus Initialization

Value in PointValue (106) = 1, No Run Mode

Value in PointValue (107) = 1, Expansion Bus Reset

Value in PointValue (108) = 1, Expansion Bus Error Trapped

Value in PointValue (109) = 1, Transfer CTO ROM defaults to Factory CTO

Value in PointValue (110) = 1, Execute main control algorithm

Value in PointValue (111) = 1, Read/Write to EEPROM

Value in PointValue (112) = 1, Warmup Mode Enabled

Value in PointValue (113) = 1, Night Setback Initialize

Value in PointValue (114) = 1, Cooling Mode

Value in PointValue (115) = 1, Get System Parameters from EEPROM

Value in PointValue (116) = 1, Save trapped errors to EEPROM Error Buffer

Value in PointValue (117) = 1, System Error trapped

Value in PointValue (118) = 1, Local Access (uses Pushbutton on IMC board)

Value in PointValue (119) = 1, Single Phase Mode

Value in PointValue (120) = CURRENT SYSTEM OPERATIONAL MODE (0-255)

Value in PointValue (121) = DEVICE IDENTIFICATION LSB

---

## **3.2. Read Economizer Board Status**

---

**Description of this command:**

Returns EM1 Economizer board status information. If EM1 board is not present, a timeout error will be reported.

**Type of data handled by this command:**

Analog Input

**Number of points accepted by this command:**

1-10.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

6

**Meaning of the DriverP3 parameter:**

190

**Values that are returned:**INPUTS:

Value in PointValue (0) = SW1 Input

Value in PointValue (1) = 1, Global Enthalphy Input

Value in PointValue (2) = SW2 Input

Value in PointValue (3) = 1, Differential Enthalphy

Value in PointValue (4) = Enthalphy Setpoint

Value in PointValue (5) = Indoor Enthalphy

Value in PointValue (6) = Outdoor Enthalphy

Value in PointValue (7) = Damper Position

Value in PointValue (8) = Minimum Damper Setting

Value in PointValue (9) = Damper Motor PWM

### **3.3. Go to Local Thermostat Control Mode**

---

**Description of this command:**

This command will cause the IMC to use a locally connected thermostat to control heating and cooling cycles.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

0

### 3.4. Go to Room Sensor Control Mode with no backup

---

**Description of this command:**

This command will cause the IMC to use a room sensor to control heating and cooling cycles with no default mode in the event a sensor error is detected.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

16

### 3.5. Go to Room Sensor Control Mode with Local Thermostat backup

---

**Description of this command:**

This command will cause the IMC to use a room sensor to control heating and cooling cycles with Local Thermostat Control (P2=00) as a default mode in the event a sensor error is detected.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

17

## 3.6. Go to Room Sensor Control Mode with Return Air Sensor backup

---

**Description of this command:**

This command will cause the IMC to use a room sensor to control heating and cooling cycles with the Return Air Sensor used in place of the room sensor in the event a room sensor error is detected.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

18

## 3.7. Go to Service CTO Configure Mode

---

**Description of this command:**

Not currently used.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

32

## 3.8. Return Air Sensor to Control Mode

---

**Description of this command:**

This command will cause the IMC to use the return air sensor to control heating and cooling cycles. This mode is used primarily as a backup mode when other control modes exhibit a failure.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

48

## 3.9. Go to Local Test Mode

---

**Description of this command:**

Not currently used.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

112

### 3.10. Go to Remote Thermostat Control Mode with no backup

---

**Description of this command:**

This command will cause the IMC to control heating and cooling cycles by commands issued over the SBUS by remote controller. The commands used in this mode must be from the HVAC Command Group, P2=01, Command Block P2=20 - P2=2F. In the event of SBUS failure, no backup mode is selected.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

128

### 3.11. Go to Remote Thermostat Control Mode with Local Thermostat backup

---

**Description of this command:**

This command will cause the IMC to control heating and cooling cycles by commands issued over the SBUS by remote controller. The commands used in this mode must be from the HVAC Command Group, P2=01, Command Block P2=20 - P2=2F. In the event of SBUS failure, the IMC will default to the Local Thermostat Control Mode (P2=00).

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

129

## 3.12. Go to Remote Thermostat Control Mode with Return Air Sensor backup

---

**Description of this command:**

This command will cause the IMC to control heating and cooling cycles by commands issued over the SBUS by remote controller. The commands used in this mode must be from the HVAC Command Group, P2=01, Command Block P2=20 - P2=2F. In the event of SBUS failure, the IMC will default to the Return Air Sensor Control Mode (P2=30).

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

130

### 3.13. Go to Remote Thermostat Control Mode with Room Sensor backup

---

**Description of this command:**

This command will cause the IMC to control heating and cooling cycles by commands issued over the SBUS by remote controller. The commands used in this mode must be from the HVAC Command Group, P2=01, Command Block P2=20 - P2=2F. In the event of SBUS failure, the IMC will default to the Room Sensor Control Mode (P2=10).

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

131

### 3.14. Go to Cool Thermal Storage Control Mode

---

**Description of this command:**

This command will cause the IMC to control heating and cooling cycles by commands issued over the XBUS from the TS1-1 Cool Thermal Storage Interface board. The TS1-1 board is in turn connected to the Cool Thermal Storage Bus (TBUS) and receives the commands from the Master CTES controller. If a TS1-1 board is detected on powerup, the IMC will automatically place itself in this mode of operation. As with other remote modes, a five minute bus activity timeout timer is running, and if the TS1-1 board loses communications over the TBUS, it will timeout, returning the to IMC to the TSTAT control mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

144

### 3.15. Go to Direct Digital Control Mode with no backup

---

**Description of this command:**

This command will cause the IMC to independently control all compressors, fans, heating, reversing valves, and blower by commands issued over the SBUS by remote controller. The commands used in this mode must be from the HVAC Command Group, P2=01, Command Block P2=60 - P2=6F. In the event of SBUS failure, no backup mode is selected.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

160

### 3.16. Go to Direct Digital Control Mode with Local Thermostat Mode backup

---

**Description of this command:**

This command will cause the IMC to independently control all compressors, fans, heating, reversing valves, and blower by commands issued over the SBUS by remote controller. The commands used in this mode must be from the HVAC Command Group, P2=01, Command Block P2=60 - P2=6F. In the event of SBUS failure, the IMC will revert to Local Thermostat Control Mode (P2=00).

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

161

### 3.17. Go to Direct Digital Control Mode with Return Air Sensor backup

---

**Description of this command:**

This command will cause the IMC to independently control all compressors, fans, heating, reversing valves, and blower by commands issued over the SBUS by remote controller. The commands used in this mode must be from the HVAC Command Group, P2=01, Command Block P2=60 - P2=6F. In the event of SBUS failure, the IMC will revert to Return Air Sensor Control Mode (P2=30).

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

162

## 3.18. Go to Direct Digital Control Mode with Room Air Sensor backup

---

**Description of this command:**

This command will cause the IMC to independently control all compressors, fans, heating, reversing valves, and blower by commands issued over the SBUS by remote controller. The commands used in this mode must be from the HVAC Command Group, P2=01, Command Block P2=60 - P2=6F. In the event of SBUS failure, the IMC will revert to Room Sensor Control Mode (P2=10).

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

163

## 3.19. Go to Remote Test Mode

---

**Description of this command:**

This command will allow remote control of IMC outputs. The commands used in this mode must come from the Manual Command Block, P2=03.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

208

## 3.20. Go to Remote Standby Mode

---

**Description of this command:**

This command must be issued before any other Mode command is sent. This command causes the IMC to enter an idle mode, clearing all outputs and timers, to safely transition to another mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

209

## 3.21. Go to Manufacturing Test Mode

---

**Description of this command:**

This command will allow remote control of IMC outputs. The commands used in this mode must come from the Manual Command Block, P2=03.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

8

**Meaning of the DriverP3 parameter:**

240

## 3.22. Set W1 Status

---

**Description of this command:**

This command will only work when operating in Remote Operation mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

1

**Meaning of the DriverP3 parameter:**

32

## 3.23. Set W2 Status

---

**Description of this command:**

This command will only work when operating in Remote Operation mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

1

**Meaning of the DriverP3 parameter:**

33

## 3.24. Set Y1 Status

---

**Description of this command:**

This command will only work when operating in Remote Operation mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

1

**Meaning of the DriverP3 parameter:**

34

## 3.25. Set Y2 Status

---

**Description of this command:**

This command will only work when operating in Remote Operation mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

1

**Meaning of the DriverP3 parameter:**

35

## 3.26. Set G Status

---

**Description of this command:**

This command will only work when operating in Remote Operation mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

1

**Meaning of the DriverP3 parameter:**

37

## 3.27. Set Compressor 1 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

1

## 3.28. Set Compressor 2 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

2

## 3.29. Set Compressor 3 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

3

### 3.30. Set Compressor 4 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

4

### 3.31. Set Electric 1 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

17

## 3.32. Set Electric 2 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

18

## 3.33. Set Electric 3 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

19

### 3.34. Set Electric 4 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

20

### 3.35. Set Gas Heat 1 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

33

### 3.36. Set Gas Heat 2 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

34

### 3.37. Set Gas Heat 3 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

35

### 3.38. Set Gas Heat 4 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

36

### 3.39. Set Service Relay Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

48

## 3.40. Set Fan 1 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

81

## 3.41. Set Fan 2 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

82

## 3.42. Set Fan 3 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

83

## 3.43. Set Fan 4 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

84

## 3.44. Set Fan 5 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

85

## 3.45. Set Fan 6 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

86

## 3.46. Set Reversing Valve 1 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

97

## 3.47. Set Reversing Valve 2 Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

98

## 3.48. Set Blower Status

---

**Description of this command:**

This command will only work when operating in Remote Test mode or Manufacturer Test mode.

**Type of data handled by this command:**

Digital Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Meaning of the DriverP3 parameter:**

128

## 3.49. Set Occupied Heating Setpoint

---

**Description of this command:**

This command works in any operating mode.

**Type of data handled by this command:**

Analog Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

1

**Meaning of the DriverP3 parameter:**

1

## 3.50. Set Unoccupied Heating Setpoint

---

**Description of this command:**

This command works in any operating mode.

**Type of data handled by this command:**

Analog Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

1

**Meaning of the DriverP3 parameter:**

2

## 3.51. Set Occupied Cooling Setpoint

---

**Description of this command:**

This command works in any operating mode.

**Type of data handled by this command:**

Analog Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

1

**Meaning of the DriverP3 parameter:**

3

## 3.52. Set Unoccupied Cooling Setpoint

---

**Description of this command:**

This command works in any operating mode.

**Type of data handled by this command:**

Analog Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

1

**Meaning of the DriverP3 parameter:**

4

## 3.53. Send Manual Command as Analog Output

---

**Description of this command:**

This command works when in Test or manufacturing mode. It allows you to sent any of the commands in the COMMAND GROUP 03.

**Type of data handled by this command:**

Analog Output

**Number of points accepted by this command:**

1.

**Meaning of the DriverP0 parameter:**

Unit Address (1-31).

**Meaning of the DriverP1 parameter:**

Sending Device Address (0-255).

**Meaning of the DriverP2 parameter:**

3

**Values that are sent:**

Value in PointValue (0) = Command from 00h to 88h (see table in IMC protocol specification)

## 4. Appendices

### 4.1. Error messages

---

The following list shows all the possible error messages that can be returned by the protocol driver during a failed communication in the 'DriverStatus' property.

This list does not include some error messages that can be returned by the activex component while attempting to establish a connection.

- [1005] DRIVER (Internal): Invalid driver stage
- [1300] PROTOCOL (Timeout): No answer
- [1433] PROTOCOL (Format): Validation error in device response
- [2002] CONFIG (DataType): Digital inputs are not supported by this driver
- [2147] CONFIG (NumValues): Only one value can be read or written
- [2176] CONFIG (NumValues): Too many values (max=10)
- [2183] CONFIG (NumValues): Too many values (max=122)
- [3024] CONFIG (P0): Invalid device address (1-31)
- [3570] CONFIG (P1): Invalid sending device address (0-255)
- [4520] CONFIG (P3): Invalid command
- [8119] CONFIG (Remote): Error executing command
- [8120] CONFIG (Remote): Error executing command (invalid mode or command)
- [8129] CONFIG (Remote): Error placing device in standby mode
- [8132] CONFIG (Remote): Error setting new setpoint value

### 4.2. Keywords list

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The following list shows a set of words directly related to this driver.

"Bus, Commercial, Cooling, Heating, IMC, LENNOX, System, Units".